WHAT IS CLAIMED IS:

1. A method for making a memory structure having different-sized memory cell layers, comprising:

- forming at least two layers of ferromagnetic materials;
- forming at least one mask layer above said ferromagnetic materials;
- patterning said at least one mask layer;
- etching said ferromagnetic materials using said at least one mask layer as a first etch transfer mask;
- laterally reducing a planar dimension of said at least one mask layer to be narrower than said ferromagnetic materials; and
- etching a layer of said ferromagnetic materials using said reduced at least one mask layer as a second etch transfer mask, such that said ferromagnetic layer being etched becomes a different lateral size than another ferromagnetic layer of said ferromagnetic materials.

2. The method of claim 1, wherein said at least one mask layer includes a hardmask material.

3. The method of claim 1, wherein said at least one mask layer includes a metal.

4. The method of claim 1, wherein said at least one mask layer includes a photoresist material.

5. The method of claim 1, wherein said at least one mask layer includes a first mask layer and a second mask layer.

6. The method of claim 5, wherein said patterning said at least one mask layer comprises etching at least said first mask layer until an undercut appears below said second mask layer.

7. The method of claim 6 further comprising etching said second mask layer to form a patterned second mask layer, before said etching of said first mask layer.

8. The method of claim 6, wherein said etching said first mask layer includes etching in a chemical solvent that preferentially etches said first mask layer relative to said second layer.

9. The method of claim 1, wherein said etching said ferromagnetic materials includes forming a memory cell comprising said at least two layers of ferromagnetic materials.

10. The method of claim 9, wherein said memory cell includes a data layer, a spacer layer, and a reference layer.

11. The method of claim 1, wherein said laterally reducing includes performing a reactive ion etch.

12. The method of claim 11, wherein said reactive ion etch is an anisotropic etch.

13. The method of claim 11, wherein said reactive ion etch is an isotropic etch.

14. The method of claim 1, wherein said laterally reducing includes performing a chemical wet etch.

15. The method of claim 1, wherein said laterally reducing comprises:

performing an etch to reduce a planer dimension of said at least one mask layer.

16. The method of claim 1, wherein said etching a layer of said ferromagnetic materials using said reduced at least one mask layer comprises etching away a portion of said ferromagnetic layer not protected by said reduced at least one mask layer.

17. The method of claim 16, wherein said etching away a portion of said ferromagnetic layer includes a highly directional physical etching.

18. The method of claim 17, wherein said physical etching includes ion beam milling.

19. A nonvolatile memory array comprising a plurality of magnetic memory structures, each of said magnetic memory structures having different-sized memory cell layers and being made by a process comprising:

- forming at least two layers of ferromagnetic materials;
- forming at least one mask layer above said ferromagnetic materials;
- patterning said at least one mask layer;
- etching said ferromagnetic materials using said at least one mask layer as a first etch transfer mask;
- laterally reducing a planar dimension of said at least one mask layer to be narrower than said ferromagnetic materials; and
- etching a layer of said ferromagnetic materials using said reduced at least one mask layer as a second etch transfer mask, such that said ferromagnetic layer being etched becomes a different lateral size than another ferromagnetic layer of said ferromagnetic materials.

20. A method for making a memory structure having different-sized data and reference layers, thereby reducing the likelihood that fringe magnetic fields from one of said layers can adversely affect another of said layers, comprising:

- forming a memory cell including at least a data later and a reference layer;
- forming a mask above said memory cell;
- using said mask to etch said memory cell;
- etching said mask to be narrower than said memory cell in at least one lateral dimension; and

- using said narrowed mask to etch at least one of said layers to be narrower than another of said layers in at least one lateral dimension.

21. The method of claim 20 wherein an amount of narrowing of said layer depends on a desired amount of fringe magnetic field reduction.

22. A magnetic memory structure having different-sized data and reference layers, thereby reducing the likelihood that fringe magnetic fields from one of said layers can adversely affect another of said layers, being made by a process comprising:

- forming a memory cell including at least a data later and a reference layer;
- forming a mask above said memory cell;
- using said mask to etch said memory cell;
- etching said mask to be narrower than said memory cell in at least one lateral dimension; and
- using said narrowed mask to etch at least one of said layers to be narrower than another of said layers in at least one lateral dimension.